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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/606,864 | 06/27/2003 | Hiroyuki Nakagawa | 26B-018 | 5829 |

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| EXAMINER | |
|---|---|
| ROBERTSON, JEFFREY | |
| ART UNIT | PAPER NUMBER |
| 1712 | |

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/606,864 | NAKAGAWA ET AL. | |
| | Examiner | Art Unit | |
| | Jeffrey B. Robertson | 1712 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *2-11,13 and 14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-11,13 and 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2-11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randall et al. (U.S. Patent No. 5,714,573) in view of Hino et al. (JP 2001-151937, English Translation obtained from JPO Website).

For claims 2 and 13, Randall teaches biodegradable compositions that contain polylactide polymers and elastomers. (Col. 2, lines 9-12). Randall teaches that the composition is crystalline. (Col. 7, line 65, through col. 8, line 25). For claims 5-8, Randall discloses that the elastomers have functional groups such as epoxy groups that are capable of reacting with the polylactide polymer. (Col. 10, lines 16-35). The elastomers are polyurethane or polyethylene elastomers. (Col. 9, lines 19-30). For claim 9, Randall teaches that the elastomers are functionalized to an extent of 2, 10 and 25 %. (Col. 21, line 48 through col. 22, line 29). For claims 10 and 11, Randall teaches that the elastomer is present in amounts of 1-40% by weight of the composition. For claims 3 and 4, Randall teaches that the compositions are formed by mixing at a temperature of from 150° C to 200° C, which would inherently be at least 15 degrees above the glass transition temperatures of the polylactides used by Randall. (Col. 14, lines 53-57).

For claims 13 and 14, Randall fails to teach the addition of acrylic-modified polytetrafluoroethylene to the compositions.

Hino teaches biodegradable compositions that are used to form molded articles. See Abstract. In paragraph [0009], Hino teaches that acrylic modified polytetrafluoroethylene is added to the composition. See also abstract. Hino teaches that the biodegradable constituents include polylactide polymers. Paragraph [0008].

It would have been obvious to one of ordinary skill in the art to add an acrylic-modified polytetrafluoroethylene in the amounts set forth by applicant to provide more durability to the articles produced by Randall. The motivation would have been that Hino teaches that improved processing and mechanical properties. Since Randall is also directed to improving mechanical properties of biodegradable compositions, one of ordinary skill in the art would have added the above-described fluoropolymer. See abstract and paragraph [0033] of Hino.

Although the references are silent with respect to heat-resistance, the examiner's position is that heat-resistance would be an inherent property of the composition since the same constituents are used to form the composition.

***Response to Arguments***

5. Applicant's arguments filed 12/21/05 have been fully considered but they are not persuasive.

Applicant first argues that there is no disclosure or suggestion that the compositions produced are heat-resistant. The examiner does not find this argument persuasive because as set forth above, the examiner's position is that heat-resistance would inherently be obtained through the combination as set forth above.

Next, applicant argues that it would not have been obvious to combine the two references because the primary component of Hino et al. is starch, known to be a weak material and since Randall is directed to impact resistant compositions, on of ordinary skill in the art would not turn to the Hino reference. Applicant also argues that the reasons for addition of the fluororesin in Hino would not concern Randall because

starch is not a component in Randall. In response, the examiner disagrees. First, the Hino reference teaches up to a 50:50 ratio of starch to biodegradable resin. See paragraph [0013] of the translation. Therefore, the compositions are not necessarily limited to starch compositions. In addition, in paragraph [0002], Hino specifically mentions the property of impact resistance as mechanical properties of interest. As a result, one of ordinary skill in the art would have considered the Hino reference relevant to the Randall reference because both references are concerned with impact resistance and have similar biodegradable polymers.

Last applicant argues that foaming is inconsistent with the high-impact resistance of the material of Randall. In response, applicant's argument is not persuasive because Randall also contemplates the formation of foam and foamed articles in col. 3, line 51. Therefore, the rejection as set forth above has been continued.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (571) 272-1092. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey B. Robertson
Primary Examiner
Art Unit 1712

JBR